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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,472	02/05/2002	Kiyoshi Hayashi	10059-270U1 (P20277-02)	8130

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AKIN GUMP STRAUSS HAUER & FELD L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103-7013

EXAMINER

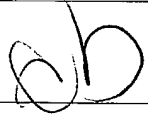
DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/067,472	Applicant(s) HAYASHI ET AL. 	
	Examiner Tracy Dove	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the communication filed on 2/26/04. Applicant's arguments have been considered, but are not persuasive. Claims 1-6 are pending. This Action is made FINAL, as necessitated by amendment.

Claims Analysis

Claims 1 and 3 recite "a nickel hydroxide having a content of sulfate ions in a crystal of nickel hydroxide of 0.4 wt% or less", and further recite, "the sulfate ions *have been* removed from the crystal of nickel hydroxide with an alkaline solution". Thus, the claims will be interpreted as a nickel hydroxide having a content of sulfate ions in a crystal of nickel hydroxide of 0.4 wt% or less that has already be treated with the alkaline solution. Specifically, the alkaline treatment results in a nickel hydroxide having a content of sulfate ions in a crystal of nickel hydroxide of 0.4 wt% or less. See specification at page 7 and Example 1.

Claim Rejections - 35 USC § 112

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a nickel hydroxide powder having a mean particle size of about ten microns (Example 1, page 10), does not reasonably provide enablement for a nickel electrode having an active material of nickel hydroxide with a mean particle size of about ten microns. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. Upon a close reading of Example 1 of the specification (pages 10-11) a mean particle size of about 10 microns is only used to describe a nickel hydroxide material produced after an alkali treatment. Example 1 states the produced nickel hydroxide was used to produce the nickel

Art Unit: 1745

electrode. The nickel hydroxide powder was mixed with a cobalt powder, a cobalt hydroxide powder and a zinc powder and water was added to the mixture. The mixture was kneaded (pressure added) to make a paste. Thus, the specification does not teach the particle size of the active material of the produced nickel electrode. The specification only discloses the particle size of an intermediate product that is further processed to produce the nickel electrode.

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a nickel hydroxide powder having a mean particle size of about ten microns formed according to Example 1 (pages 10-11 of specification), does not reasonably provide enablement for any nickel hydroxide powder having a mean particle size of about ten microns. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Example 1 requires the nickel hydroxide be formed from aqueous nickel sulfate solution and an aqueous sodium hydroxide solution with an ammonia complex forming agent. A property disclosed only in an example cannot be broadened to encompass materials not disclosed by the example.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Melin, US 3,657,013 in view of Ettel et al., US 5,281,494.

Art Unit: 1745

Melin teaches that precipitation processes for obtaining nickel hydroxide result in residual sulfate amounts of 0.4-0.6 percent or residual sulfate amounts of 0.1-1.2 percent. The residual sulfate content is dependent chiefly of the pH value chosen in a second precipitation step of the process for forming the nickel hydroxide. After the first precipitation process (line 55), a second precipitation process is employed during which the greater part of the anions of a metallic salt (sulfate anions) or metallic salts absorbed in the hydroxide precipitate are released without alteration of the crystal structure of the hydroxide precipitate (nickel hydroxide) (col. 1, lines 45-70). The nickel hydroxide is used for the positive electrode of an alkaline battery (col. 1, lines 7-9).

Melin does not explicitly state the mean particle size of the nickel hydroxide material precipitated.

However, Ettel teaches a nickel hydroxide material and a method of forming the nickel hydroxide. Ettel teaches that the particle size of the nickel will determine how much catalyst is necessary to ensure that the reaction proceeds. The catalyst increased the kinetics of the reaction using fine nickel powder and is essential when coarser grades of nickel powder are used. Nickel sulfate is a preferred catalyst (2:5-41).

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one of skill would have known that varying the reaction products would produce nickel hydroxide particles having different mean particles sizes. Ettel teaches that the particle size may vary depending on the desired amount of catalyst added to the reaction. Furthermore, the courts have ruled that a limitation that at most relates to

Art Unit: 1745

the size of the article under consideration is not ordinarily a matter of invention. Applicant has not demonstrated the criticality of the mean particle size limitation. See MPEP 2144.

Melin does not explicitly teach the sulfate ions are removed with an alkaline solution having a pH of 13-14. However, the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. Melin teaches the amount of sulfate ions present in the nickel hydroxide depends chiefly on the pH value of the second precipitation or washing step. The nickel electrode of the prior art and the nickel electrode of the claimed invention appear to be the same (both recite a nickel hydroxide having 0.1-0.4% of sulfate ions). See MPEP 2113.

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Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Kawase et al., US 5,879,835.

Kawase teaches a method of manufacturing a nickelous positive electrode active material for an alkaline battery having a formation process in which nickel hydroxide and cobalt hydroxide are formed by adding an alkali metal hydroxide to a reaction system containing nickel ions and cobalt ions (abstract). The nickelous active material can suppress the self-discharging of the battery (col. 2, lines 53-55). A solid solution of an ammine cobaltous complex containing nickel and cobalt can be prepared by 1) an expedient in which ammonium sulfate or nitrate is added into and dissolved in a mixed aqueous solution consisting of a Ni-salt and a Co-salt or 2) an expedient in which a Ni-salt and a Co-salt are dissolved in aqua ammonia of low basicity with nitrates or sulfates usable as the salts of Ni (nickel) or Co (cobalt) (col. 4, lines 54-65). Example 1 teaches nickel nitrate and cobalt nitrate were added to water to prepare a mixed aqueous

Art Unit: 1745

solution. Then, ammonium nitrate was added to form a cobalt ammine complex. Further, sodium hydroxide (alkaline solution) was added to the solution and the pH was adjusted to 13. Thus, a solid solution consisting of cobalt hydroxide and nickel hydroxide was obtained. The solid solution was filtered, washed and dried to form the nickelous positive electrode active material (col. 5, line 49-col. 6, line 2). Note since nitrate salts are used, no sulfate ions are present in the nickelous hydroxide. The nickelous active material was pasted onto a collector material to form the positive electrode (col. 6, line 66-col. 7, line 11).

Kawase does not explicitly state the mean particle size of the nickel hydroxide material formed.

However, the courts have ruled that a limitation that at most relates to the size of the article under consideration is not ordinarily a matter of invention. Applicant has not demonstrated the criticality of the mean particle size limitation. See MPEP 2144.

Kawase does not explicitly teach sulfate ions are removed with an alkaline solution having a pH of 13-14. However, the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. The sulfate ions are not required in the produced nickel electrode (0.4 wt% of less includes zero), thus, these process limitations are not given patentable weight. The nickel electrode of the prior art and the nickel electrode of the claimed invention appear to be the same. Yano teaches an alkaline solution having a pH of 13 was used to manufacture the nickel electrode comprising nickel hydroxide and cobalt hydroxide.

Response to Arguments

Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1745

Examiner points out that the inventive concept is not nickel hydroxide having a mean particle size of about ten microns. The courts have ruled that a limitation that relates to size only, without a showing of criticality, is considered obvious. One of skill in the art would have known that nickel hydroxide particles can have various particle sizes.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 7, 2004


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1745